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COST AND MANAGEMENT

Vol. 30

A Plan to Improve
Maintenance Costs . . .

PERIODICALS
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PROFIT

Some Aspects and Applications
of Distribution Costing . . .

By Andre Parent

Efficient Management
Needs Expense Control . . .

—An Exhortation to the Student Members

By George Moller, D. Jur., C.A., R.I.A.

LOSS

Official Journal of
**The Society of Industrial and
Cost Accountants of Canada**

Jan., 1956

MANAGEMENT NOTE

1956

As we entered 1956 most of our economists and business leaders in Canada forecast that the coming twelve to eighteen months would be the most flourishing in our immediate history.

- All good business men will be competing for their full share of the increased business available.
- Regardless of the size or special circumstances which may govern your business, there is no basic reason why you cannot make your organization the best of its kind in the world.
- The most successful organizations have taken advantage of all the proven management tools to become leaders in their industry. Those firms who fail to do this will be left behind competitively through this period.
- If you plan to be the best, we believe you could not pick a more propitious time than now for action.

The first step is to back off and critically and objectively appraise your present operations and establish your basic weaknesses, if any.

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Our day-in, day-out job is to assist management in making this appraisal and in working out the simplest direct answers to result in a tight, well integrated organization.

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Cost and Management

VOL. XXX

JANUARY

No. 1

A PLAN TO IMPROVE MAINTENANCE COSTS

By G. C. E. BAKER 11

Mr. Baker is a Senior Consultant with Associated Industrial Consultants (Canada 1952) Ltd., Toronto. His work has been with a variety of industries including textiles, metal refining, heavy and light engineering, food and oil, in the United Kingdom, Middle East and Canada. He is an honours graduate in Mechanical Engineering of London University in England. Mr. Baker has made a special study of the problem of controlling the work of indirect employees and has been intimately connected with recent developments in this field.

SOME ASPECTS AND APPLICATIONS OF DISTRIBUTION COSTING

By ANDRE PARENT 17

Mr. Parent has been associated with the firm of J. Edgar Dion, Consulting Management Engineers, Montreal, for the past eight years. Prior to this he was Assistant Chief Cost Accountant for R.C.A. Victor Company Limited, which company he joined in 1938 after graduating from the Faculty of Commerce, University of Montreal. He is a member of the Society of Industrial and Cost Accountants of Quebec and a member of the Association of Masters of Commerce.

EFFICIENT MANAGEMENT NEEDS EXPENSE CONTROL

—An Exhortation to the Student Members
By GEORGE MOLLER, D. Jur., C.A., R.I.A. 26

Dr. Moller is Treasurer and Director of Robertson-Irwin Ltd., Hamilton. He studied law and political science at the University of Prague, where he received the degree Doctor Juris and was for some time Secretary to the Management of the Bohemian Union Bank. After coming to Canada in 1939, he joined the firm of George A. Touche and Company and obtained his C.A. Degree in 1946. Dr. Moller is a Registered member of the Society of Industrial and Cost Accountants of Ontario and chairman of the Hamilton Chapter.

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Editorial Comment . . .

GRANT MADE TO S.I.C.A. EDUCATIONAL COMMITTEE

A grant of \$5,000 has been made to the Educational Foundation of the Society of Industrial and Cost Accountants of Canada by the executors of the estate of the late Dr. Arthur F. Haasz, all former friends, relatives and collaborators of the deceased. They are:

Mr. Geza G. Por, Toronto, President of Erie Flooring & Wood Products Ltd.

Mrs. Zlata Haasz, Toronto, a director of Erie Flooring & Wood Products Ltd.

Dr. George Moller, Hamilton, Treasurer and a director of Robertson-Irwin Ltd., and a director of Erie Flooring & Wood Products Ltd.

Dr. Gabriel Gat, West Lorne, Vice-President of Erie Flooring & Wood Products Ltd.

Dr. Eugen Schwarz of New York

Dr. Nicholas Ujlaki of New York

The executors have all come as immigrants to this continent since 1939.

Born in 1888 in the small Slovakian village of Kvassov, Dr. Haasz was an ardent admirer of the Canadian way of life and eager to contribute to the amazing growth of its economy. A student of political science and economics at the University of Budapest, where he obtained his doctor's degree, Dr. Haasz was essentially a man of letters with a keen interest in science, and he often regretted that his advanced age kept him from pursuing an academic career in Canada. However, his early experience as director and secretary of the Hermes Bank in Budapest, Hungary, and later as the director and secretary-treasurer of the important textile concern of Zilina Cloth Mill Ltd. in Zilina, Czechoslovakia, led him into the field of financial administration in which his prime achievement lay.

The political events of 1938-9 in Central Europe induced Dr. Haasz and his brother Alexander to leave their native country Czechoslovakia. In Canada the brothers acquired in 1940 the closed-down former Seaman Kent plant in West Lorne, Ontario. As the Erie Flooring and Wood Products Ltd., they built this flooring manufacture, hardwood and lumber wholesale concern into a flourishing business, transforming it into a public company and establishing subsidiary companies eastward and westward. Dr. Haasz was in charge of the administration and finance of the company until his brother's death in 1944, when he assumed the presidency until his own death in 1953. He left the bulk of his estate for educational and charitable purposes in his adopted country, Canada.

In making this grant, the executors of the Dr. Haasz estate have recognized the need for an organized educational programme for executive development in the field of financial management. Universities

EDITORIAL COMMENT

and professional accounting associations have been increasingly occupied with this problem in recent years and have experimented extensively with various plans. The fact that some of the larger corporations have done some experimenting of their own would seem to indicate that these plans are not meeting the requirements of business. Except for short courses being offered in Business Management, there is no opportunity to pursue a well-defined programme of education for development after the individual has had some business practice. The Executive Development courses sponsored by the Society are an attempt in this direction.

It is, therefore, a signal tribute to the Educational Foundation that it has been chosen by the executors of the Dr. Haasz Estate as the medium for the advancement of financial management. In the short history of the Educational Foundation, incorporated in 1952, this is the first bequest that it has received. The bequest will be of great value not only in achieving the Foundation's aim, but also as a recognition of the possibilities for furthering its growth.

35th ANNUAL
Cost and Management Conference
MONT TREMBLANT LODGE
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JUNE 27th to 29th, 1956

The following topics will be discussed:

Effective Administration, Organization and Management
Administrative Skills of the Industrial Accountant
Significant Areas for Cost Reduction
Control Techniques and Measurement of Performance
Integrated Data Processing

A special feature this year will be a full day of concurrent group discussions on the following subjects:

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Work Simplification in the Office
Allocation of Distribution Costs
Reports and Statements to Management

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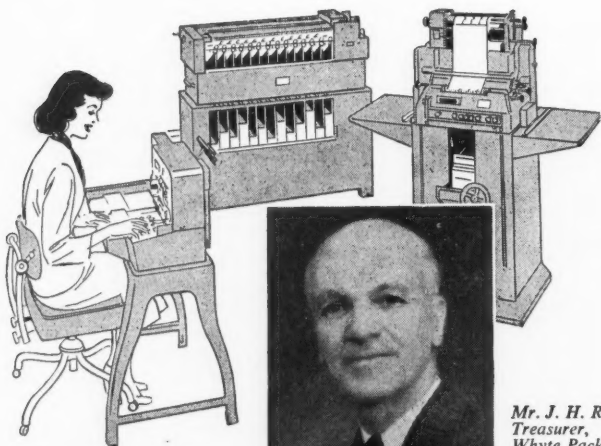
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COST AND MANAGEMENT



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C. & M. Round-Up . . .

By N. R. BARFOOT, R.I.A.

Signs and Portents for '56

Here is what 150 of Canada's leading businessmen think about this year.

80% thought their own goods and services would increase.

60% predicted a constant level of employment.

48.6% forecasted increased consumer price index.

90.7% were certain that salaries and wages would rise.

Only 38% expected to increase sales staffs.

30% expected to increase advertising.

Over 50% of the men contacted are planning to increase production capacity. The average is a 13.9% increase.

No one expected to decrease present capacity.

There are some additional comments on the state of the economy in '56.

100,000 Canadian families will move into the \$6,000 a year or more class.

Corporate profits will hit the 2 billion mark, an all time after-tax high.

Over 120,000 houses will be built.

Gross national product will rise to nearly 28 billion.

Defense spending will be close to 2 billion.

The primary steel producers will spend more than 100 million in '56 and '57 on capital expansion.

Car Insurance May Be Less This Year

An extensive study in car insurance costs has been on for some time. There are some interesting figures on the subject.

Accident claims per 100 cars have dropped 18% since 1950.

Canada has been divided into 100 separate insurance areas and rates are established by the loss record of the people in your area.

Drivers have been divided into some 8 categories.

The average cost of a claim in 1954-55 was \$226.

63% of your insurance premium is earmarked for claims. The remaining 37% is used to pay agents, costs of handling and a profit, ratio of 2 to 2½%.

Driving habits of those under 25 materially affect insurance rates. This applies to men only. Statistics show that female drivers under 25 have no effect on rates.

Drivers over 25 years of age and with a claim-free 3 years behind them, receive a yearly discount as high as 20%.

Competition will also affect rates. There are some 280 companies battling for your business.

The net result of these studies and economics around car insurance could result in a 5 to 10% drop in premiums on a nation wide basis.

COST AND MANAGEMENT

Canadian and U.S. Growth

Here are some interesting comparisons showing the percentage growth between 1929 and 1955 of the U.S. and Canada.

	Canada	U.S.
Population	55.9%	36.0%
Federal Government payroll	582.6%	814.9%
Civil Service	232.5%	347.8%
Federal Expenditures	990.3%	2,145.4%
Public Debt	577.9%	1,539.7%
Gross National Product	325.7%	270.6%

Atomic Power for Canada

Construction will start this spring on the first atomic power station in this country.

It will be constructed near the Ontario Hydro's plant at Des Joachim's on the Ottawa.

Cost will be about 15 million.

Completion date in 1958.

Power rating is 20,000 KW.

The objectives of this particular plant are:

To provide information for the construction of a large station (100,000 KW).

To gain practical data on the economics of power production with nuclear plants.

To gain experience on design and operations of reactors.

To train personnel both in plant operation and design.

The cost of nuclear-produced electricity from a large station is presently estimated at 10 to 13 mills per KWH. Present costs are from 4 to 7 mills through coal and hydro plants.

It is estimated that ten 100,000 KW nuclear power plants may be required in the 1960's in Canada.

Many 2 and 3,000 KW plants could be used in the far north.

The Wire and Cable Business

There are 14 companies in Canada in the business.

1955 sales volume was approximately 135 million.

Markets are: construction, communication, telephone and signal systems, conductors to transmit electricity, and secondary manufacturing where products incorporate wire and cable.

During last year the production of electricity reached around 80 billion KWH in Canada. This is $1\frac{1}{2}$ times the 1939 figure, nearly 4 million customers in Canada are now getting electrical service — twice as many as in 1939 and the average Canadian uses twice as much electricity as he did in 1939.

This all means more business for the wire and cable people.

Most of the concerns report expansion and good times.

Problems of course are fluctuating copper prices and surplus production dumping from the U.S.

C. & M. ROUND-UP

Earnings and Taxes

In the last tax year, some 150,000 people in the 5 to 6 thousand dollar income field, paid the greatest amount of tax income to the federal government (7.6%).

There are only 250 Canadians with incomes of more than \$100,000. Total income in this bracket was 46 million of which 20 million was taken by the government.

About $\frac{1}{2}$ or 1,570,000 tax payers up to the 3 thousand dollar per year income bracket pay 30% of the tax income.

There were a total of 3,389,530 tax payers who earned 11,466 million and paid 1,147 million in taxes.

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Books in Review . . .

MANUAL OF INDUSTRIAL ENGINEERING PROCEDURES

By John A. Patton, Management Engineers Inc., Editor, Wm. C. Brown Company Publishers, Dubuque, Iowa.

Reviewed by **GEORGE H. MILNE, B.Com., B.Eng., L.A.**

Have you ever wondered just exactly what an Industrial Engineer does? The Manual of Industrial Engineering Procedures sets out in outline form ten problem solutions, as they would be tackled by an Industrial Engineer. The ten topics considered are: I Wage Incentive Programme, II Job Evaluation Programme; III System for Cost Control, IV Production Planning and Control System, V Plant Layout, VI Sales and Distribution Analysis, VII Personnel Selection Programme; VIII Employee Training Programme, IX Inventory Control Programme, and X Materials Handling System.

In the Preface, the publishers, Wm. C. Brown Company, state: "The purpose of this manual is to attempt to dispel this air of mystery and magic, and to set forth in an easy-to-understand style the actual procedures of one of America's most successful firms of Management Engineers. These procedures can be applied to your own business, whether you have 10 or 5,000 employees." This being the purpose, it is definitely well accomplished.

Each of the ten topics considered is allotted a section of the manual with a similarity of treatment. Each section commences with an outline of the specific problem with special emphasis on the pitfalls that might be expected in installation of this type of system. This is followed by a detailed step-by-step outline of the necessary procedure that might be followed. It is worth noting in passing, that these steps are unusually complete and although not made to be followed to the letter in every case, would serve as an excellent guide to any one instituting such a programme.

The detailed instructions for installation are followed by a "Maintenance Checklist" which serves to explain the necessary items which should be considered in maintaining the system once installed. Often in programmes of this type, great significance and attention are given to the installation and no thought given to maintaining the plan once installed. As any plan must grow and develop as part of the organization which fostered it, these directions would provide a useful means of keeping a plan current, even though initially installed by outsiders. It points up many pertinent considerations which might otherwise be overlooked.

The fourth part of each section contains what might be considered one of the most useful and perhaps unique features of the manual; that is, an exceptionally complete and well thought out bibliography of pertinent data. To illustrate, taking the "System for Cost Control" as an example, there are five 8½ x 11 sheets of reference material on this topic alone, including texts, articles, etc.

BOOKS IN REVIEW

Should you be in any way connected with instituting one of the systems described, consulting this manual or using it as a basic starting place would prove most rewarding. The descriptions and methods are well developed and perhaps the greatest attribute is the completeness of coverage. Even if you are not at present involved in such problems but are interested in how they are tackled by the Industrial Engineer, then this manual will provide one of the best sources of material that could be used as a reference.

ELECTRONIC DATA PROCESSING IN INDUSTRY

A Case Book of Management Experience, published by the American Management Association, 330 West 42nd St., New York 36, N.Y.

Reviewed by J. H. REID, C.A.

This book consists of papers submitted and supplementary material prepared for an American Management Association special electronic conference held in March 1955.

In the accounting field, no subject at present is creating more discussion and controversy than electronic office equipment. Undoubtedly, electronics will have a revolutionary effect on recording functions now being performed. Data not now available due to the cost of preparation and information which is obsolete resulting from time element preparation, will, through the magic of electronics, be made possible to materially improve administration controls and techniques.

Electronic data processing can create wonders, but at what price? Can the prompt additional information made to top executives for management control be provided at an economical cost? Does your volume warrant expenditure involved? These and many other problems are discussed in this book.

The authors — 22 in number — cite their experiences in the study and introduction of electronic data processing equipment. The writers represent the top echelon in their respective business fields. They consist of comptrollers, system and method specialists, management consultants, presidents, vice-presidents, representatives of the U.S. armed forces, public accountants and actuaries. They are engaged in the fields of light and heavy electrical manufacturing, public utilities, insurance, railroading, chemicals and steel. The systems discussed include management control, payrolls, inventories, production scheduling, accounts receivable, expense and general accounting, labour budgeting, policy files and railroad communications.

The book covers the subject most comprehensively and in a realistic way with practical examples. It should be read by every accountant and it is a must for everyone contemplating the introduction of electronic equipment into his business. To the uninformed in this subject, it wouldn't be amiss to acquaint themselves with a layman's knowledge of the principle of electronics before reading this book.

COST AND MANAGEMENT



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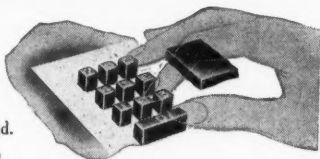
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A Plan to Improve Maintenance Costs . . . *

By G. C. E. BAKER,
*Senior Consultant,
Associated Industrial Consultants (Canada 1952) Ltd., Toronto*

Labour costs form a major part of the expense of maintenance. By the use of work measurement and the setting of standards, the author describes how maintenance overhead was substantially reduced in a number of companies with whom he had been associated.

MOST companies nowadays realise the importance of controlling, in the fullest sense of the word, the prime costs of their businesses such as those represented by material and direct labour but they generally regard maintenance overheads simply as a necessary evil, something like the poor — to be ever with us. With this in mind they are normally satisfied to go no further than to adopt procedures that will give them a fairly accurate picture of how much money they are spending and which will allow them to proportion the cost to the direct operations involved in their business.

Recording and allocating incurred costs is one aspect of the Cost Problem. I want to discuss another aspect, that of controlling the magnitude of these costs as a whole, in order to reduce the amount of money that has to be recorded and allocated.

Maintenance costs naturally vary between industries and generally involve a very considerable sum of money each year. What is more, as the degree of automation in industry increases, so does the importance of and the need to control these overhead costs.

The cost of labour generally forms a major portion of these costs and so its control is of prime importance.

Maintenance jobs are normally scattered throughout a plant and so the maintenance foreman normally has to control a scattered labour force. We will recognize just what a difficult task this is and should not therefore be surprised to find that the productivity of maintenance labour is normally low and that we get a very small return for wages paid.

Work Measurement

How can we therefore ensure a good labour effort for the wages paid? The solution is to be found in the use of work measurement. You will naturally ask "can you measure the work content of a maintenance job?" Well, the answer is "yes", — with sufficient accuracy to provide management with a practical means of measuring the efficiency of individual workers as well as of the maintenance group and to provide the means for planning work ahead within practical limits of precision. Measured "work values" can also be used as a means of

*This talk was presented at the October 1955 meeting of the Grand River Chapter of the Society of Industrial and Cost Accountants of Ontario.

COST AND MANAGEMENT

applying individual incentives if management wishes to obtain the maximum benefits.

Perhaps here would be the place to mention that while our Company strongly advocates the use of bonus incentives because we find they work and bring the greatest benefits to the management and to the men, it is not essential to use them. In fact several of our jobs, particularly in Canada, have been carried through without their use where the client asked us to do so.

As to the method used for measuring work, we call it "Analytical Work Evaluation". The first stage is to break down the job into its component elements of work. This is a very important stage and I will have more to say about it later. We then analyse each stage and give it its correct time value, making allowances for complex jobs needing more than one man.

The accuracy of the overall work value obviously depends on the accuracy of the values given to these work elements and so a few words on their derivation will not be out of place.

We have found that if you break down the average job into its component operations, over a period of time, a number of these operations, such as doing up a certain size of nut and bolt, cutting certain lumber sections, applying a certain kind of paint and so on, become repetitive. These component operations can be studied and we are able to build up comprehensive tables of unit time values for them. Periodically these tables are revised and extended to cover new methods and changed conditions. When applying labour controls we can often use these previously determined basic tables without much alteration, though we check to ensure that they meet a particular client's conditions and, if not, we have to develop new ones. We naturally have to be very careful as regards the size of these individual values. If they are too small they may lead to increased accuracy but require too much clerical effort. If they are too large obviously they will lead to errors.

With experience we can cover an ever increasing field of maintenance work with these pre-determined elemental values. At present 80% is not out of the ordinary. However, we are left with those elements for which we have no tables, and values have to be estimated in most cases by relation to some similar element for which we already have a value. Very seldom is it that the Evaluator, a man especially trained for his work, is stumped and forced to rely purely on experience. In any case any errors in estimating become negligible in comparison with the work value for the job taken as a whole.

This problem of work measurement has been dealt with in some detail because of its importance and because it represents such a large step forward from older methods where someone, often the foreman, estimated how long a job would take based simply on his experience and, incidentally, often had to do this as well as his other jobs, so could obviously not spend too much time on detail.

A PLAN TO IMPROVE MAINTENANCE COSTS

Definition of Work

I must now deal with the problem of improving our methods of telling the maintenance tradesman and for that matter his foreman what he has to do. Experience tells us that the benefits to be derived by attention to this problem are just as great as those arising from the use of work measurement.

We can appreciate this problem more when we think of the odd notes and messages which we normally pass to our maintenance men and compare these with the elaborate instructions given to process foremen and operatives. Furthermore, whilst our average process operator may be doing the same job or very limited range of jobs each day, very many maintenance men will be doing a different job almost every day.

The solution is to carefully examine jobs, in detail, before work starts so as to determine just exactly what has to be done, what methods are to be used, what equipment, material and so forth. Properly carried out this can, of course, immediately lead to economy in labour and material and can generally be most conveniently done by the Evaluator, who is specially trained in this technique, when he is assessing the value of work to be done.

The information regarding the work to be done can usually best be passed on to the tradesmen on a Job Card or Methods Sheet giving the salient features of the job.

The problem of measuring and defining work is most important. Its solution forms the sure foundation on which we build our schemes for controlling maintenance costs. In other words, we have taken the first steps towards eliminating guess work, making ready for "Management by Measurement".

Methods of Labour Control

Let me now outline some typical labour control schemes and their benefits.

The simplest form of control is that of measuring the value of work to be done and comparing this with the time actually taken. The job is described, together with its value, on a card given to the tradesman. Allowance has, of course, to be made for work of an urgent nature, but by and large this method affords the best chances for management to make full preparation and for the workman to know exactly what he is required to do before the job is started. It also gives him a target to improve his efficiency.

In all our work we insist that there should be a mechanism for comparing forecasts based on measured standards with what is actually accomplished.

An example of this is the weekly cost control documents prepared for labour control.* The first, headed Labour Utilisation, broadly indicates the amount of work done each week and the level of pro-

*Samples are given as an appendix to the text of Mr. Baker's talk.

COST AND MANAGEMENT

ductivity reached. The second compares the Actual with the Standard payroll and also gives unit costs which may be used for Job Costing, whilst the third explains the difference between the Actual and Standard Payrolls, indicating the causes of this Excess Cost. These documents aim to provide management with a simple and factual statement of costs and to highlight matters requiring attention. Obviously they have to be designed to meet the particular requirements of each company.

A development of these simpler labour controls is the system of Full Work Scheduling. Work evaluation of all jobs can be used to give a sound and practical method of planning and forward loading future work. Unlike the process planning which is used in many industries, in this case we have to make allowances for work which has to be done quickly and which cannot be planned in the future. However, this need not detract from the effectiveness of the scheme and a great many companies who used to complain that maintenance jobs would hang around and not get done, are now able to plan ahead and know for certain when their maintenance will be done.

One last example of labour control I would mention is that of Preventive Maintenance. Briefly, such schemes cover the periodic replacement of parts or machines themselves and not just periodic inspections, such replacements being geared to the economics of maintenance, possible breakdowns, obsolescence and so forth.

Other Methods

I would like to mention some other methods which can be used to reduce maintenance costs, either by themselves or in conjunction with those I have already described.

The first is that used when dealing with "service" men, including shift personnel, janitors, greasers, delivery services, yardmen, shop labourers, locomotive drivers, crane men and so forth. The first stage is to find out exactly what these men do, and what they are supposed to do, which is not always quite the same thing. Such duties can be generally tabulated, rationalised and then their work value directly measured. However, on top of these duties such men often have to perform certain services, the effectiveness of which for a variety of reasons cannot be measured as a series of pre-determined work values. For example, shift maintenance men are generally employed simply to make first aid repairs when the normal maintenance and supervisory staff is not on duty. In these cases we have to establish indirect means for measuring the effectiveness of their services, measuring such things as the number of plant stoppages, the number of orders undelivered, time shown wasted while waiting for these services and so forth. Before leaving this subject I might mention that some of our most effective schemes have been in connection with these "service groups".

A further development covers problems associated with the economical running of the service plant, the operation of which is normally

A PLAN TO IMPROVE MAINTENANCE COSTS

the responsibility of the maintenance department, for instance, boilers, water treatment plants and so forth. Once again a detailed study of the operators' responsibilities and the plant operation generally discloses that rational standards can be set and used to measure operation efficiency and to set up control costs.

Benefits of a Control Programme

In conclusion, I would like to list some of the benefits which a company may reap by using controls such as I have described:

- (1) Productivity can be increased so that more maintenance can be done for the same cost, which will allow you to catch up on outstanding work. Or, alternatively, the same volume of work can be done for less cost.
- (2) Work can be planned with confidence knowing exactly when it will be done.
- (3) The standard of maintenance can be improved, particularly with the introduction of preventive maintenance.
- (4) Rational schemes can be introduced for the economic replacement of obsolete or obsolescent plant.
- (5) Plant down time can be reduced, very often giving rise to very large savings indeed in the form of increased Production Capacity.
- (6) The causes of excessive cost can be identified exactly.

I would also like to mention some additional benefits to the above which a company may receive through the introduction of incentive payments and which may well be worthwhile in themselves.

First, I have known cases where the introduction of incentives has been the answer to large wage demands.

Then again, in plants where direct workers are already paid incentives, indirect workers can now participate, the company receiving tangible benefits for the additional payments made to them. This, of course, is of great value to any company which has had to make "lieu bonus" payments to these men in order that their wages shall be in line with direct workers who are paid bonus. Incidentally this can include supervision, such as foremen.

Finally, the additional wages paid allows management to make a better selection of personnel than was previously possible.

Before closing, I would like to tell you of the financial savings which have been made by three out of several companies with which I have been personally associated.

At this stage Mr. Baker discussed some of the hard cash benefits derived by some of the companies with which he had been personally associated.

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Briefly these may be summarized as follows:

- (a) *Large sized company employing*
 140 men \$125,000 per annum
- (b) *Medium sized company employing*
 70 men \$ 68,000 per annum
- (c) *Small sized company employing*
 15 men \$ 10,000 per annum

APPENDIX

TYPICAL WEEKLY COST CONTROL DOCUMENTS

LABOUR UTILISATION								
Week Ending	Actual Hours Worked	Production			Department Productivity	Lost Time		Overtime % Total Hours
		Measured Units	Un-measured	Total		Mins.	% Total Hours	
Mar.29								
Apr. 5	2,355	169,810	8,150	177,960	78.2	6,520	4.6	4.2
Apr.12								

WAGES COST						
Week Ending	Actual Payroll	Standard Payroll	Excess Cost		Unit Costs	
			Total \$	%	Actual ¢	Standard ¢
Mar.29						
Apr.5	5,461.15	5,081.55	379.60	7.5	3.07	2.87
Apr.12						

ANALYSIS OF EXCESS COSTS \$							
Week Ending	Lost Time			Low Productivity	Overtime Penalty	Night Shift Premium	Total
	Await Work	Await Plant	Equipment & material				
Mar.29							
Apr.5	72.00	63.00	52.00	30.50	146.50	15.60	379.60

FOR FURTHER READING

- A CASE IN CONTROL OF MAINTENANCE LABOUR COSTS, by E. C. Zajac, N.A.C.A. Bulletin, July 1955.
- MAINSPRINGS OF MAINTENANCE COST CONTROL, by C. R. Cooper, N.A.C.A. Bulletin, Sept. 1954.
- HOW TO FIND AND CONTROL YOUR MAINTENANCE COSTS, by Harold E. Bliss, Factory Management and Maintenance, March 1953.
- ORGANIZATION OF THE MAINTENANCE FUNCTION, by T. F. Willers, A.M.A. Manufacturing Series, No. 212.

Some Aspects and Applications of Distribution Costing . . . *

By ANDRE PARENT,
Senior Member,
J. Edgar Dion Consulting Management Engineers,
Montreal, Quebec

The control of distribution costs, unlike the control of production costs, is a field generally ignored, the author contends. He then outlines a constructive approach to the problem, based on careful market analysis and a breakdown of distribution expenses.

AN OUTSTANDING authority on marketing in the United States, Marvin Bower, has written "the level of wastefulness in distribution is so high that *nearly any company* can slash away great hunks of excess marketing fat with an instrument no more delicate than a meat axe. Only a distressingly small number of companies have refined distribution to the point where fat removal is so delicate an operation as to require the use of a scalpel." This situation applies even more so in Canada.

Distribution costs are too high today in nearly all companies. This is no direct reflection on the way sales managers perform. This state of affairs exists mostly because relatively few companies have made a constructive and planned effort to apply objective measurement of cost against the various marketing functions . . . as they have done in production.

As management consultants, nearly every month we come across the irrational situation whereby manufacturing costs are maintained and controlled within five decimals, where these costs are carefully and sometimes painstakingly segregated between departments and between products . . . and yet, when the time comes to apply shipping, selling and administration costs, they are slapped on usually through the very convenient use of overall ratios. All the care, effort, and at times, devotion poured into the establishment of manufacturing costs may thereby be nullified by this undiscerning application of distribution expenditures. As accountants, we have realized at one time or another, the unreasonableness of this situation. We obtain steam-meter readings to allocate steam costs between departments or, if Joe of the "widgets department" is borrowed by the maintenance department for two hours, we ascertain that a proper payroll transfer is made to relieve production costs and thus prevent an unfavourable labour variance from showing up in the production cost report. Yet when the time comes to allocate *selling, shipping and administration* expenses, in other words distribution costs, the generally accepted way is to apply a straight overall percentage on costs.

The disturbing element is not whether a percentage of costs rather than a percentage of sales or a more refined method of allocation should

*An address given at the November 1955 meeting of the Cornwall Chapter of the Society of Industrial and Cost Accountants of Ontario.

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be used . . . No — it is the usual absence of *control* of marketing expenditures.

To some firms control means strict adherence to a budget. To others it means a general cost reduction programme based on various themes such as "What can we do without? What can we eliminate? What can we scrimp on?" This is the negative — or destructive approach. In so doing, management limits marketing expenditures to keep them within a fixed ratio to dollar sales. This might be called straight-jacket control. The absurdity of that concept arising from some situations is readily seen, for instance, as sales drop promotion and advertising expenditures are reduced to maintain the relationship of sales expenses to sales.

There is a much better way — a positive approach concerned with obtaining the greatest possible yield and effectiveness from marketing operations so that the total unit costs will be at a minimum while the total ^{net} profits will be at a maximum. After all it is in profits that we are really interested. It is this constructive approach that I want to explore with you. It is different, not strictly an accounting problem and solution. This approach has the further psychological advantage of leaving the selling organization running smoothly, undisturbed by sporadic and often short-lived campaigns of sales cost reductions which tend to paralyze initiative to a great degree. With this approach, the sales division of most companies will run on a higher level of efficiency, tuned up for the more aggressive and effective performance that fiercer competition demands.

There is a pronounced difference between production cost control and distribution cost control. In controlling production costs, management is largely concerned with the effect of volume on costs, while in the case of most distribution costs, we consider the effect of such expenses on volume. For example:—Before embarking on an advertising programme a firm tries to forecast the yield of such an expenditure in terms of increased sales.

Management can now calculate the effect of volume on manufacturing costs but . . . it is much less definite about the effect of distribution expenditures on the volume of sales. With the use of P/V charts, we can predict with reasonable accuracy the production costs at various levels of activity. On the other hand, increasing your sales force by 25% cannot be translated into a definite forecast of increased sales. As a matter of fact it may react quite differently.

Distribution costs is an all-embracing title. It covers such varied and diverse components as freight and transportation, warehousing, storing and handling expenses. However, the major items of costs are usually sales expenses both in the field and at home, promotional expenses, service costs and all the sales administrative expenses. These diverse elements are closely knit together. They are all subject to cost reduction through the application of the methods we will describe later.

SOME ASPECTS AND APPLICATIONS OF DISTRIBUTION COSTING

Today profits are squeezed between the ever rising production costs and the selling price subjected to the downward pressure of competitive business. Profits are not alone in this pressurized area — marketing costs are there too. It is clear that if profits are to be increased or even maintained, marketing cost reduction offers the greatest scope.

We must be aware of two facts:—

Firstly—Marketing or distribution expenses are large and in a generally increasing proportion to the total expenditures of most firms.

Secondly—They are costs that can be reduced.

I have been talking in a general way up to now; let us get closer to the actual work involved.

Market Analysis

The approach to distribution costs reduction is based on a careful analysis of marketing facts.

The work of extracting marketing facts should be assigned to someone who has no other basic responsibility. Certainly it is not a job for the sales manager himself. He cannot spare that much time from his important duties of supervising his sales organization.

Distribution cost reduction is a joint responsibility of sales and accounting executives. Success depends on the close co-operation of both sides. Let us assume that we are elected to direct our company's distribution cost reduction programme. Here is how we might tackle it.

There are two important sources for marketing facts:—

- (a) *Within the company*—Our own company's record will probably give us the company's past and present sales patterns and behaviour. It will also give us facts about the characteristics of our customers.
- (b) *Outside the company*—Other sources provide facts about sizes of markets, facts about customers' reaction to our products and policies and even facts about competitors' activities and methods.

For greater results we must combine facts from both sources. A single comprehensive programme which considers the company's distribution problems as part of the same picture is without any doubt the best way. The analysis of our own sales records is the first step in any marketing management programme. The results of that sales analysis have an important bearing on the amount and kind of outside research required.

Control Areas

In order to measure performance and control our marketing costs, carefully defined sales-control areas must be set up. These areas should be as small as possible, yet practical. They should be small because of

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the ever present danger of combining a weak unit with a strong one and thereby concealing a vital weakness. Each sales-control unit should also be as representative as possible. The sales credited to an area and the sales expenses allocated to it determine its performance.

For instance, the Windsor sales should not show up artificially higher, because they include the purchases of an important distributor who ships in quantity to Edmonton. The problem is an individual one in each company and must be solved on the basis of facts. We may choose from counties, provinces, townships, wholesale trading areas, consumer trading areas and the existing sales territories.

Basis for Market Estimates

Once our control area has been decided upon, the next step is to find out what portion of the company's total market it represents. For this purpose a preliminary market index may be used. This is simply a yardstick with which the relative sales opportunity is measured by territory. For instance a commonly used general market index is population. It is logical for a company selling toothpaste to set a higher quota for a control unit with 200,000 population than one with 50,000. Another and a more generally useful index is retail sales. A population index gives us the number of people in our control units but a retail sales index indicates people with money to spend. People in an expensive residential district will buy more of almost anything than people in a depressed area. And another example; a manufacturer of automobile accessories might go by the number of automobile registrations; a distributor of office equipment by the number of office employees.

In the final analysis what we need is a relative means to determine territorial variations in sales performance. Now control areas have been defined and we know their relative sales potentialities. We have to establish "pars" for each control area. If we take the last full year's sales and break them down by control areas and by using the market index we calculate what proportion of the total sales each area should have contributed, we are almost certain to find a terrific spread between the top and bottom control units in sales performance. We are now able to spot important weaknesses and start doing something about them immediately. The goal is to maintain the "above par" districts while strengthening the weaker ones.

Breakdown of Distribution Costs

A sound marketing programme must be based on a true picture of distribution costs. Financial statements are not sufficient. A functional breakdown of expenses is needed. Let us keep it simple at first. Here is a rough breakdown which will fit many companies.

1. Field sales expenses—Salesmen's salaries or commissions, automobile expenses, traveling expenses, district sales office expenses, etc.

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2. Sales service expenses—Invoicing, credit and collection, sales records, handling routine inquiries, sales reports, etc.
3. Advertising and sales promotion—Cost of advertising time and space, dealer aids, advertising department salaries and expenses, etc.
4. Sales administration—Salaries and expenses of sales executives, sales training expenses, sales analysis, market research, etc.
5. Freight and delivery—All expenses of shipping outgoing goods and handling returned goods, traffic department, losses on damaged goods, etc.
6. Storage and handling—Cost of warehousing and storage space, wages of shipping and warehouse employees, materials handling equipment, etc.
7. Miscellaneous marketing expenses—All expenses which will not fall clearly into our other classifications, losses on damaged stock, etc.

This breakdown segregates our costs in a functional way and enables us to study them in proper perspective. Now we can see where the bulk of our marketing dollar is going.

From the above breakdown our next step is to allocate the costs in various ways to gauge the effectiveness of the spending. Let us remember the goal is profit, not volume. Too many sales executives are obsessed with getting volume regardless of the cost. First of all we distribute the costs to each sales control area. The basis of allocation will depend on the particular sales organization and type of business.

Field sales expenses may be allocated on the basis of number of calls.

Sales service expenses on the number of invoices or invoice lines. And so on.

Now we determine the cost per dollar of sales for each control-unit by dividing the total costs by total sales in the unit. Get ready for a shock. Some of our prize areas will look pretty sick on this basis. Let us look for the silver lining though, remember each "soft spot" is a chance to brighten up our profit picture.

Now we will try allocating our distribution costs to customers. In most companies the findings will be startling. We will probably find that a handful of customers contribute the lion's share of our business. The appalling fact is that we are spending most of our marketing money getting a little volume from the horde.

The remedy involves shifting the selling effort on the basis of customers' potential.

Another important phase in distribution cost control is the proper supervision of our sales force.

If we want the salesmen in our organization to do a top notch job we must define their duties in detail.

—What territory will they cover?

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- What customers should they see?
- How often?
- What functions are they to perform, etc.?

How do we gauge their performance? It is not necessary to wade through all the call reports for answers. A much more effective way is to have a weekly summary sheet disclosing these facts about each salesman:

1. Order/call ratio i.e. total orders divided by the number of calls made.
2. Average number of calls made daily.
3. Average order size.
4. Average sales per man-day.
5. Average number of orders per man-day.

From this report we tell at a glance how each man is doing. Furthermore, since each ratio complements the other, we will soon discover if a salesman is "doctoring" his reports.

For instance if a salesman adds a few fictitious calls to cover up an afternoon spent at a picture show, the order/call ratio will be low. Let us not use this information as a stick to beat up salesmen, let us use it to know when and where the men need help.

There are other areas to investigate, for instance: the cost of processing orders; the relative costs of various distribution channels, etc.

So that we will be aware of the lushness of potential profits waiting to be mined, here is what some U.S. firms have achieved as reported by the United States Department of Commerce in one of their publications on Distribution Costs.

Company No. 1

Customers were classified on the basis of the amount of their annual purchases and marketing costs were allocated to each size group. Of the total number of accounts 41% bringing in only 7% of sales were found to be unprofitable. Over a period of years, most of these unprofitable customers were dropped. In a period of 4 years sales increased 76%. Marketing expenses were cut in half from 22.8% to 11.5% of sales and a net loss of 2.9% of sales was changed into a net profit of 15.0%.

Company No. 25

An index of sales in relation to potential for each product in each territory enables this company to find, diagnose and correct sales "soft spots". As a result sales have increased 366% and there has been a 45% reduction in the ratio of field sales costs as compared with the 1939 to 1941 average. There are many other amazing statements of what distribution cost control has done—by directing the available energy to produce the best profit.

SOME ASPECTS AND APPLICATIONS OF DISTRIBUTION COSTING

Let us conclude with an example closer to home. A firm, a client of ours, in one of our major centers, asked us to study their sales picture. Our approach to discover *unprofitable clients*, was as follows.

By dividing the total number of sales calls into the total direct selling expenses (salesmen's commissions, bonus, traveling expenses), the average direct selling cost per call was found to be \$5.01. With a gross margin of 22% this meant that the sales dollars per call had to be at least \$22.80 in order to cover just these direct selling expenses. Since an average of six calls per year is made on each customer it means that unless the annual sales volume was \$136.80 it was an unprofitable account, since it did not cover the direct selling expenses let alone the other distribution costs.

We have used for the following tabulation an even more conservative figure of \$125—(minimum annual purchases).

This chart caused a commotion within the company. After the initial shock however, steps were taken to correct this situation.

Door-to-door canvassing which a number of their salesmen had been partially doing was stopped. Selective selling was undertaken. An early assessment of customer potential is now made after the initial or second call whenever possible.

Each salesman (they are on a straight commission basis) was given his performance record along the same lines. From a purely selfish viewpoint each salesman knows he cannot afford nursing unprofitable accounts unless the potential is there. Another significant fact stood out. Younger salesmen were avoiding the larger accounts; bigness was frightening to them. A course in salesmanship was introduced to give the salesman additional confidence and assurance.

No magic formula was used. After thinking out the approach, it was just a question of collecting the data from existing records which any sales organization would normally have. That's the meat axe approach . . . no need for a scalpel at this time . . . in other words no requirement for expensive market research.

A word of advice:

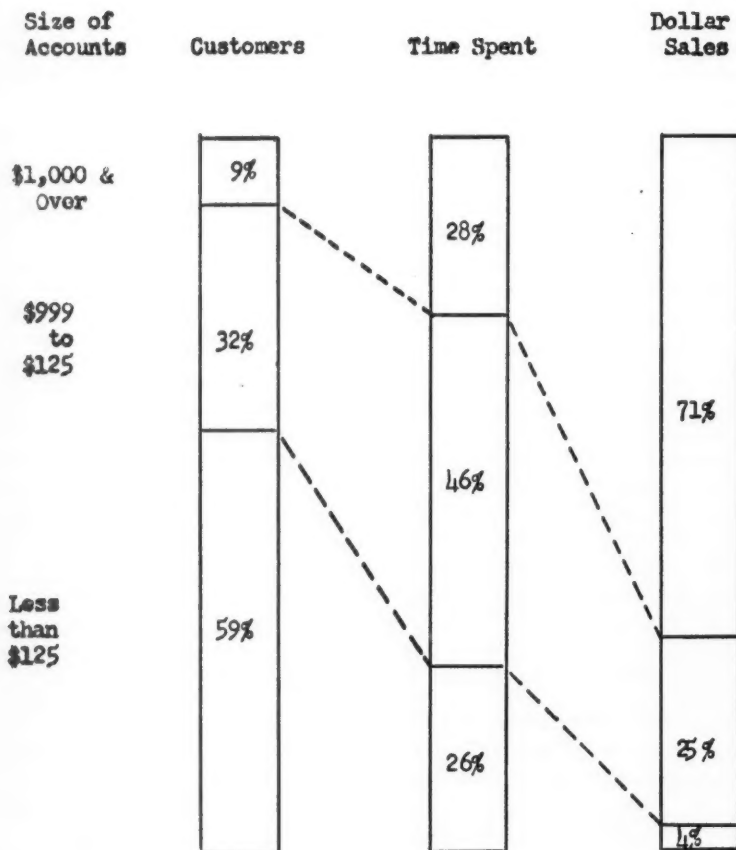
Do not undertake a Distribution Cost reduction programme unless two company requirements are filled:

- (a) Top Management must be research-minded. It must have a sincere desire to seek out facts on which to base decisions.
- (b) Sales Management must be open-minded. It must have the courage to accept facts uncovered by research and to follow where they lead.

If a company cannot meet these specifications, marketing costs analysis will waste time and money.

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ANALYSING CUSTOMERS BY SIZE GROUPS



SOME ASPECTS AND APPLICATIONS OF DISTRIBUTION COSTING

EXPLANATION OF CHART

Column No. 1

This shows the classification we adopted by size of accounts in terms of yearly purchases.

As we pointed out, for this particular company, \$125 or less signals unprofitable accounts. Further investigation was done to discover if accounts within that group had greater potential. If so, the accounts will certainly not be weeded out.

Column No. 2

This represents the segregation of the actual customers by numbers into the previous classification.

Column No. 3

By analyzing the salesmen's call reports over a period of several months, the amount of time spent against each size group was determined.

Column No. 4

The sales dollars have been allocated on the basis of the chosen classification.

FOR FURTHER READING

DISTRIBUTION COST CONTROL, by Donald A. Gaudion, The Controller, March 1955.

MEASURING AND CONTROLLING DISTRIBUTION COSTS, by H. E. Gannon, N.A.C.A. Bulletin, March 1955.

DISTRIBUTION COSTS, by J. D. Edwards, The Cost Accountant, August 1954.

PRACTICAL TECHNIQUES OF FORECASTING, PLANNING AND CONTROL, A.M.A. Manufacturing, Series No. 216.

PRACTICAL DISTRIBUTION COST ANALYSIS, by Longman and Schiff.

PERSONALS

Harvey S. Greenway, R.I.A., a member of the Calgary Chapter, has been appointed Secretary of Canadian Western Natural Gas Company Limited, Calgary.

F. J. (Monty) Desreux, formerly with Union Tractor Ltd., is now with Trident Drilling Company Limited, Calgary. Mr. Desreux is past chairman and a general member of the Calgary Chapter.

T. B. Milne, R.I.A., of the Winnipeg Chapter has been appointed Assistant Comptroller of the Great-West Life Assurance Company. He was formerly Cost Supervisor. Mr. Milne is third Vice-President of the Society of Industrial and Cost Accountants of Canada.

Efficient Management Needs Expense Control . . .

—An Exhortation to the Student Members*

By **GEORGE MOLLER, D.Jur., C.A., R.I.A.,**
Treasurer and Director,
Robertson, Irwin Ltd., Hamilton, Ont.

The industrial accountant has an important responsibility to management in pointing out the areas in which expense control should be applied. By calling management's attention to discrepancies and weaknesses — at the proper time — in the expense plan, the accountant applies the ounce of prevention that is worth a pound of cure.

WHEN choosing the title "Efficient Management Needs Expense Control", I was looking for some particular subject where I could expound the idea that the main interest of the industrial accountant lies in the field of support for industrial management. Don't make the mistake of assuming that I do not think highly of those who have to keep the cost records, and have to provide the day-to-day information for Management on the historical facts as they occur in our industrial enterprises. But the executive accountant in industry will strive to provide the tool for Management which helps Management to exercise its rightful functions. He will not usurp Management's functions, but he will be available to assist Management in exercising its functions. In short, he will not try to make Management's decisions for Management, but he will try to show the alternatives available in any one particular situation from which Management may choose. These alternatives are determined almost invariably on the basis of their effect on expenses in comparison with revenue.

What Is Management?

Let's look at Management first:

Management is the body of men in any one particular enterprise which is charged with and has authority of planning, organizing, carrying out, and measuring.

Planning:—The form of plan which is most popular and well-known is the Budget. Who is best qualified to translate the far-flung plans of management into meaningful figures, a language common to all those who are interested in industrial enterprise?—the industrial accountant.

Organizing:—In the organization of any industrial enterprise, it is of particular importance to have responsibilities and authorities so defined that, through the accounting records, it is possible to determine to what extent the particular part of the enterprise, or the executive responsible for this particular part, has lived up to his obligations, and has fulfilled the plans of Management. Therefore, the accountant in

*A lecture presented before the Student Members of the Toronto Chapter of the Society of Industrial and Cost Accountants of Ontario on February 16, 1955.

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industry should be asked to co-operate in setting up organizational plans so that his accounts can conform with these plans, and can end up in profit centre accounting, making it possible to determine factually whether the people who are responsible for a certain sphere of the enterprise have succeeded or failed in their task.

Carrying out the operations of the enterprise: Management carries out the operation of the enterprise by delegation down the line. "Leadership is the art of getting somebody else to do something you want done because he wants to do it," as President Eisenhower has so nicely expressed it.

Measuring:—Measuring is one of Management's main functions, and there again the tool through which this measurement can be achieved is the industrial accountant. He is the one who can give Management the picture of the operation by showing exactly how the plans have been carried out, and with what success or failure. This is one sphere where the industrial accountant has a long way to go. This is a field in which we will develop, and I predict, develop rapidly. The need for measuring performance is a crying one in industry, and becomes better recognized the more mechanized our operations become; and the more complicated it is to plan and carry out plans which require tremendous investments; these investments if made wrongly, can lead to disastrous results for the enterprise, and if multiplied, for society as a whole.

Reporting to Management

You cannot correct a situation unless you are aware of the situation. Therefore, Management needs expense control. It is most important for Management to be informed about the turn events take, i.e., as fast as possible, as accurately as practical, and in a form which is readily understandable to the manager responsible for the operation. This duty again falls on the industrial accountant, and it should be our understanding that we have the responsibility of equipping ourselves for writing reports, preparing findings, in a way which is understandable to the reader who has no (or very little) accounting experience and education. In brief, let's use a common language which communicates effectively our fact findings to the people who have to draw their conclusions from these facts. It is, again, one field of endeavour where we have a long way to go. Every time I see sheets of 14-column paper (and sometimes they are even wider than 14 columns), and see people seriously endeavouring to spread these schedules under the nose of the General Manager who has perhaps never had any accounting education, I shudder; because what else than a scramble of misunderstood data can come out of this effort. First of all, the manager is already reluctant to look at the mess; who wouldn't be? Secondly, he will feel obliged to control the arithmetic on the 14-column paper, because this is very inviting and easier to do than to achieve an analytical understanding of

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the report. Thirdly, he will be attracted by a lot of figures which are all in the best of shape because they picture perhaps the exact fulfilment of the plan in the Budget, and they are all correct. What will be the outcome? He will overlook the significant deviations from the plan, and will not have even an earthly chance to find these deviations unless they are pointed out to him, and if you are prepared to point them out to him, why feed him the big paper in the first place? Why not put it in a few paragraphs, and tell him "This item is significantly different from the Budget, and this other item is very much different from the Budget, and this one indicates a situation which is completely wrong?"

We industrial accountants have to exercise a lot of self-control in carrying out our duties of reporting to Management. In endeavouring to do that, the industrial accountant should take time to reflect and ask himself: "In what way can I be helpful to Management? What is Management expecting from me? What are those guys up on executive row doing anyway? What are they concerned about? What would they like to know?" It is not your fault nor my fault, but it is a fact that Management is most inarticulate in asking questions. They would like to know several things, but they never say so, or if they say so, they say it by asking for a definite report, not telling why they want the report. So it's up to us, every one of us, to ask ourselves from time to time "What is it all about? What is a professional manager here for? What kind of a role is he playing in society and what does he expect me, the industrial accountant, to do for him?"

The professional manager is an entirely new category of animal, and we should be better acquainted with him before we try to help him. An excerpt on the science of managing in America, from the first monthly issue of a new magazine called "Management Science" may be quoted here:¹

"... the professional manager . . . 'an individual who, because of his training, experience, and competence, is employed to develop and expand the assets and realizations of owners.'

The concept of professional managing as Leadership by persuasion rather than by command, and the codification of the Professional Manager's distinct and unique work into the four sub-functional elements of planning, organizing, integrating, and measuring, is another of the hard-won milestones in the development of a true Science of Managing."

Expense Control

"Why does efficient Management need expense control?"

In the expenses and their control, lies the whole secret (if you want to call it a secret) of Management. What is control? Control is

¹"Evolution of a 'Science of Managing' in America", by Harold F. Smiddy and Lionel Naum — Management Science, October 1954—p. 24.

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holding the reins and that again means planning and comparing the actual performance with the plan. The only man who doesn't control is the controller. His title is a misnomer, and we'd better acknowledge it, because controlling means managing, and the controller, apart from his line function as the head of the controller's division or accounting department or whatever particular name this department might be, does not control. The controller is merely providing the tools, the facts and data for Management to exercise control.

We have to come back in all our deliberations to the basic ideas which govern the organization of our industrial enterprise, to the planning, organizing, carrying out, and controlling or measuring. The industrial accountant has to be part of this process from the beginning, i.e., the budget, up to the financial statements at the end of the year; these should be nothing but a report on the deviations of the actual events from the figures of the budget. This is popularly called "managing by exception", or "reporting by exception". Instead of the 14-column sheets I spread before your eyes, you should then have a report which shows only those accounts where significant deviations from the plan have occurred. Mind you, in some enterprises, these variances could occur in all accounts, but that is not generally the case.

We should realize that the standard made America what it is—the leading industrial power in the world. It is a fact that we produce in ever-increasing volume and that we are, therefore, able to do a big job at low cost; this raised our standard of living to its high level. Mass production is only possible under standardization and this very simple statement has been realized in industry all over the country with only one exception, the office; our offices aren't standardized; our accounting isn't standardized; we haven't even progressed to the point where we have developed and acknowledged any uniform cost accounting terminology—another field where you, the future R.I.A.'s, may major and make your rightful contribution to the profession. You see "Records' Management", for instance, a big name for an important but not so big sector of endeavour, which is something that has appeared in literature only within the last two or three years—up to that time we had actually kept or destroyed records almost at random. In this field, we certainly lack expense control. This may be a rather strong statement, but I submit to you the question: How many of the enterprises with which you are connected have a scientifically planned and systematically applied record management? And mind you, the record management starts at the source. I consider a record keeping and record destruction system as good only if and when the copies coming out of the typewriter have a definite destination, and a definite time, and a definite place, and out of ten copies, nine should have the destination "waste paper basket" before they ever reach a filing cabinet. But I submit to you that instead of nine out of ten, only one out of ten reaches this depository. Why? Because we have not paid the same attention to

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standardization and system and scientific approach as our colleagues concerned about mass production in the plant, starting in 1900 and developing through the two wars, which, of course, have contributed to this strongly, up to date.

Expense control means managing expenses; that means, let not the expense govern you, but you govern the expense. That means that nothing should be spent in a business or industry unless the expense has been carefully planned and predetermined. This predetermining of expenses should be all-comprising. Don't stop at any point and say, "I don't want to worry about how much Joe Smith will spend on his sales trip to Noranda. If he wants to be reimbursed, he will put the amount into his expense account anyway, so what's the use of trying to control him." This is wrong! First of all, his report will have a good incentive to correctness if he knows beforehand how much you expect him to spend. Secondly, it may make the salesman reflect whether the trip is worthwhile. Thirdly, it will lead, perhaps, not only to the planning of his expenses, but also to the planning of his route and itinerary. In short, the salesman, instead of disappearing and perhaps ending up in Noranda, or perhaps some place else in the middle of the week and perhaps seeing so-and-so at that time if perchance the guy is at home when he wants to see him and not on another trip, should foresee his trip and his expenses and obtain approval beforehand. All these "by chance" operations can be eliminated if you plan your action, which can be achieved through all-comprising and all-conclusive budgeting for your line operating men. Induce your line manager to plan and reduce his planning to writing, and the best reduction to writing is in the form of figures. Whether these figures be dates, or miles, or expense dollars, doesn't matter. The Planned Capital Expenditure Request form which is in use in our company is in your hands (see Appendix). I haven't invented this form. It is an adaptation of several forms in use elsewhere. It forces people to think before the fact rather than becoming an "accessory after the fact".

A review of the articles "The Developments in Office Electronics" (A.M.A. Office Management, Series No. 135) and "Office Managers Face Up to the Electronics Evolution" in Dun's Review and Modern Industry, September 1954 issue, will help you to link these features with expense control. There is one particularly good article, which is perhaps only on the fringe of the area concerning the industrial accountant, in Dun's Review and Modern Industry, September 1954 issue, on office management, "What is Wrong with Office Management?" I have excerpted at random almost a number of questions which you will find very pertinent—some of you may even find them impertinent—but, unfortunately, they mostly hit home.

"If you can help your office manager save \$1,500 a year and if your net profit is running 3 per cent, the savings are the equivalent of about \$50,000 in hard-to-get, extra sales. Check off below questions

EFFICIENT MANAGEMENT NEEDS EXPENSE CONTROL

you have explored. Most executives will not be able to clear more than 10 per cent out of 177 questions.

Has your company ever made detailed studies of reports, invoices, sales analyses, communications, to discover whether you can get them faster and at less cost?

How many of your middle and top-executive decision-makers are thoroughly familiar with all of your office operations, methods, procedures, and equipment?

Do your methods and procedures compare with your plant in efficiency? Are they a product of intensive research or have they developed like a patchwork quilt?

What about your office organization? Is your office manager hamstrung by lack of prestige, no power to make big decisions? How many men does he report to?

Have you analyzed your office organization?

Are your methods archaic or scientific? The odds are you honestly don't know.

Does your O.M. cover these bases before he specifies a new piece of equipment?

Do you need new equipment? These will help you decide . . .

Forms and record analyses; there's dough in details . . .

On what basis did your office manager make a decision between contract printing and job printing of your office forms?

Does your office manager have a forms retention schedule? A scientific one, or one inherited and hallowed by tradition, but heavy with cost?

Are your forms designed to eliminate unproductive motions—use of tabular stops, proper sequence of writing from the various source documents?

Do you always determine the best possible writing method—hand or machine written?

What controls are established to make certain that obsolete file material is junked on schedule?

What would happen to your vital records in event of fire? Is your permanent storage in the same building as your current files?

Do you take advantage of mechanical devices and forms handling equipment to cut costs?

Do you use similar rules for your office stockroom as in the plant? (Similar stock in same place, bulky items on lower shelves, bulk purchases, protective wrapping, precise purchase specifications, and so on).

Does your office take advantage of all discount opportunities?

COST AND MANAGEMENT

Are forms designed to be cut from standard size sheets with a minimum of waste or none at all?

How many private offices could you eliminate if you disregarded injured egos and considered only functions?

Are you going overboard on quality paper purchases? In other words, do you demand best quality where a cheaper grade is consistent with the function served?

Are all forms involved in an over-all system studied at one time for the possibility of combining or eliminating?

If you have a forms control programme, are checks made regularly to determine obsolescence and the opportunities for simplifying, combining, and so on?

Does every form have on it some type of routing instructions?

Is every form numbered, all recurring information printed?

How many months' supply of a form is ordered? (Six months is usually considered maximum.)

Are your forms inventory stocks measured against estimated use so that reorders can be made in bulk and grouped?

How much duplicate material is in your files?

Are you using special forms that can be standardized in either or both construction and paper stock? If you do, you can get a cheaper gang run printing rate. Check for unessential data.

Is there available a system analysis sheet for each form used?

Is your office manager certain the quality of paper used for records is adequate to survive the number of handlings and length of time records must be stored?

How many reports do you not study? How many could be submitted less frequently?

How many reports you are receiving have details in them that could be eliminated?

Which forms are you receiving that you don't need, or need so rarely that you could borrow them when wanted?

Are receipt slips for removed files conveniently placed to eliminate excuses for "lost" files?

Are files indexed, clearly labelled? Are contents lists kept current?

Whose grandmother designed your office layout? . . . "

Another statement is taken from an article, "Cost Controls as a Tool for Management" by J. McCall Hughes (The Controller, December 1954 issue, page 563) :

"We find the American Management Association and other similar organizations devoting more meetings to office costs than ever before. The question is being asked more frequently "How much does this office operation cost?"

EFFICIENT MANAGEMENT NEEDS EXPENSE CONTROL

This is the first step toward a control over office costs on the part of industry and holds out the hope that the knowledge of production costs developed over the years will be applied to the office in the near future.

Banks and life insurance companies have done much more in the analysis and control of office costs than have industrial organizations.

Everyone from the office boy to the president should feel a personal responsibility for providing the most efficient and, therefore, the most economical operation of the company for its owners.

The best way to do it is to establish a programme which will provide cost information to each unit in the organization, and at the same time the tools necessary to control these costs of operation.

Installing a Cost Control Programme

1. Create interest in office costs at the top.
2. Provide adequate cost information on a competitive basis.
3. Provide adequate staff assistance to aid each individual or department in doing an efficient job.
4. Provide adequate information on results attained and recognize individual or group accomplishments.

Adequate cost information on a comparative basis can take many different forms . . .

1. An expense budget
2. Functional costs
3. Standard costs
4. Departmental costs by classification of expense

The last step in the programme for controlling office costs is to inform all levels in the organization of results attained and provide recognition for individual or group accomplishments.

Cost control does not signify an unwillingness to spend money! 'You have to spend money in order to make money'."

Here again, you see the need for expense control.

Conclusion

From experience, I would say that if people who are responsible for an operation force themselves to plan and reduce their plans to writing, they will derive great benefit from this self-imposed control. They will make it a habit and the next step from this habit of planning will be comparing the results with the plans. Then by so doing, they will reduce their reporting to a statement of deviations or reporting by exception, and this will immeasurably facilitate the big and difficult job of managing because it will eliminate a great and vast number of reported facts, which, for practical purposes, are insignificant and, therefore, useless.

COST AND MANAGEMENT

I may shock you, but the observation is worth printing: A great percentage of the time and effort most assiduously spent in our accounting departments and in our cost departments is wasted. We do not make good use of the great accumulation of figure material, and if we do use it, we do it usually too late for effective remedial action. Remember, in reporting, time is of the essence!

In closing, I would like to stress that control should take place at the point where the crime is committed. It's no use making out a full and exact report at the police station after the man is dead. You should try to get involved in the brawl at the time when he is still alive and maybe prevent him from being murdered. That is the point: to get involved in time (maybe you will get hit, too). But at least you have made a reasonable attempt to prevent a bad thing from happening. If you only write an obituary in the paper, you will be just a two-bit writer, and nothing more. You will not have helped to lift the level of life. Now that's what we should do as accountants. We should insist that our records be in such a shape and form that any significant deviation from the plan (again that can only happen in an enterprise where a plan exists) is observed, reported, and if possible, adjusted and amended right on the spot. That means, e.g., if you have your labour time standardized, and the standard is known to the foreman, the foreman should immediately check performance against the standard during production of an order or process. It's no good if the cost department three months later (pardon me, in your company, it is, of course, only one week later) finds out that to make this particular order, it took the shop exactly twice as long as it should have taken based on a scientific, predetermined time standard.

But, just think of the poor guy who doesn't even know that the shop worked much too long on this piece of work. He will only realize it when the receiver walks in and takes over.

PLANNED CAPITAL EXPENDITURE REQUEST

Form No.

Date:

Description of Project:

Suggested Time

of Installation

From:

To:

Main purpose of Capital Expenditure (please check applicable category)

- "A" Rebuilding and replacement of existing facilities ☐
Additions for safety, health, improved working conditions ☐
Additions for general plant improvement ☐
"B" Additions for Quality Improvements ☐
Additions for Cost Reduction ☐
Additions for Capacity Increase ☐
Additions for New Product(s) ☐

Estimated Cost

Machinery Price

Equipment Price

Supplies

Additional Expense

(Exchange, Taxes)

How will addition be financed?

Profit Retention ☐

Temporary Loan ☐

Long-Term Loan ☐

Is expenditure necessary to maintain
Company's competitive position: ☐

Freight, Duty and Cartage
Services
Inside Labour
TOTAL

Chief ☐
 Competitor(s) ☐
 in this line ☐

Yes ☐ No ☐

Prime Profit Margin:			
Present%	Volume	\$.....
Additional%	Volume	\$.....
Anticipated%	Volume	\$.....

Is the additional expected volume due to unusually high demand of a temporary nature?

Yes ☐ No ☐

How long is this increased demand expected to last?
Please support statement by historical sales records, related, if possible, to general index of activity, rate of acceptance growth, which are helpful in judging volume estimates.

Will the increased volume be saleable without price concessions?

Does the planned increase in production necessitate:

(a) Additional Warehouse Space for—Raw Material
—Finished Product
(b) Additional facilities as —Steam
—Power
—Handling Equipment

Yes No

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

If "Yes" indicate modus of provision and estimated cost on attached sheet, if necessary.

Do the following queries indicate affirmative answers?

- (a) Are the allowances for scrap or off-goods materials consistent with standard allowed in existing similar production lines or in what is known of competitors' experience?
- (b) Have the direct, indirect and supervisory labour charges been figured at current wage rates?
- (c) Has a check been made to determine whether wage rate changes are contemplated in the near future?
- (d) Have overtime and shift differential costs and incentive allowances to be incurred at the projected production level been recognized?
- (e) Has allowance been made for the cost of social security, group insurance and other employee benefit programmes?

Effect on Existing facilities:

Does the planned capital expenditure obsolete existing facilities? Yes ☐ No ☐
What is the book value of the obsoleted facilities and at what rate will this value be absorbed through the expected profits from the new investments?

Original Cost \$..... Depreciation Provision \$..... Book Value \$.....
Suggested Absorption Rate
or
..... % Over Years

Effect on Administration and Selling:

Will the additional facilities require increases in—

	Yes	No	If "Yes" state number
Administration — Personnel	<input type="checkbox"/>	<input type="checkbox"/>
— Forms	<input type="checkbox"/>	<input type="checkbox"/>
Selling — Special Personnel	<input type="checkbox"/>	<input type="checkbox"/>
— Special Advertising	<input type="checkbox"/>	<input type="checkbox"/>

Expected Experimental Period:

When are the additional facilities expected to produce normal operating results?

Report—

After experimental period, a written report is to be furnished to Management showing a comparison of actual and estimated results.

COST AND MANAGEMENT COMMENTS

Purchasing
Sales
Controller

Date	Approval Board Meeting Date	Requested By
Management	, 19..	, 19..

FOR FURTHER READING

HOW PRACTICAL COST CONTROL HELPS MANAGEMENT IMPROVE PROFITS, by Max Block, New York Certified Public Accountant, June 1955.

COST CONTROLS AS A TOOL FOR MANAGEMENT, by J. McCall Hughes, The Controller, December 1954.

ARE YOU USING THE RIGHT TOOLS? The Office Executive, December 1953.

MANAGEMENT PLANNING AND CONTROL, an Annotated Bibliography, Controllership Foundation, Inc.

Student Section . . .

FUNDAMENTALS OF COST ACCOUNTING

QUESTION IV (15 marks)

Using the following figures, prepare material stores cards showing how you would account for Raw Material "LETA" on the:

- (a) FIFO method
- (b) Moving Average Cost method
- (c) LIFO method

Inventory balance, June 1, at 140 units at \$1.00 each.

June 2—Issued—80 units.

June 4—Received—600 units at \$1.20 each.

June 8—Issued—200 units.

June 10—Received—320 units at \$1.28 each.

June 14—Returned to Supplier—100 units of lot received June 4.

June 15—Issued—400 units.

Note: Calculations of unit costs should be made to the nearest cent only.

NOTE TO EXAMINER: QUESTION IV

One reviewer has this to say in respect to Moving Average Method: "If we are using the Moving Average Method we should stick to it. If we return \$1.20 we should go back and adjust the price of the issue on June 8th. What would our Stores Ledger Card show if we had returned all 780 units at \$1.20?"

STUDENT SECTION

SOLUTION QUESTION IV

Description:—Leta

FIFO	Received		Group Supplier Reorder Quantity				Balance		Unit Price
	Date	Quantity	Unit Price	Amount	Date Req.	Quantity	Amount	Quantity	Amount
	June 1	Bal.						140	140
	June 2	600	1.20	720	June 2	80	80	60	60
	June 4								1.00
	June 10	320	1.28	409.60	June 8	200	228	600	1.00
	June 14	100	1.20	120				460	1.20
	June 15				June 15	400	483.20	320	1.28
								360	1.20
								280	1.28
MOVING AVERAGE									
	June 1	Bal.						140	140
	June 4	600	1.20	720	June 2	80	80	60	1.00
	June 10	320	1.28	409.60	June 8	200	236	660	1.18
	June 14	100	1.20	120				460	1.18
					June 15	400	488	780	1.22
								680	1.22
								280	1.22
LIFO									
	June 1	Bal.						140	140
	June 4	600	1.20	720	June 2	80	80	60	1.00
	June 10	320	1.28	409.60	June 8	200	240	600	1.00
	June 14	100	1.20	120				60	1.20
								400	1.00
								60	1.20
								400	1.00
								320	1.28
								60	1.00
								300	1.20
								320	1.28
								60	1.00
								220	1.20

COST AND MANAGEMENT

ACCOUNTING II

QUESTION I (20 marks)

The BZ Paper Company Limited as at January 1st, 1954, decided to issue 5% bonds of \$3,000,000 maturing on 1st January, 1964. The bonds are dated 1st January, 1954, and interest is payable semi-annually on 1st January and 1st July. The bonds are callable at 102 plus accrued interest at any time after 1st January, 1959.

On 1st March, 1954, the company sold \$1,500,000 of bonds to an investment dealer at \$103 plus accrued interest. Cheques for interest were placed in the mail on 30th June, 1954. The balance of the authorized issue was sold to an investment syndicate on 1st October, 1954, at 99½ plus accrued interest.

The year end of the company is 30th November.

REQUIRED:

- (a) Journal entries to record the issue of the bonds and the interest payment.
- (b) Using the straight line basis, journal entries to record the accrued interest and amortization of bond premium and discount at 30th November, 1954.
- (c) Journal entries to record the redemption of the bond issue at 1st January, 1959.

SOLUTION:

1954

Mar. 1	Cash	\$ 1,557,500	
	Bond Interest expense		\$ 12,500
	Premium on bonds payable		45,000
	Bonds payable		1,500,000
	Sold \$1,500,000 bonds at \$103 plus accrued interest		
June 30	Bond Interest expense	37,500	
	Bank		37,500
	Issued cheques in payment of bond interest. $1,500,000 \times .05 \times \frac{1}{2}$		
Oct. 1	Bank	1,511,250	
	Discount on Bonds payable	7,500	
	Bond Interest expense		18,750
	Bonds payable		1,500,000
	Sold 1,500,000 bonds at 99½ plus Accrued interest.		
Nov. 30	Bond Interest expense	62,500	
	Bond Interest payable		62,500
	To record accrued Interest. $1,500,000 \times .05 \times 5$		

STUDENT SECTION

1,500,000 x .05 x 5

12

3,000,000 x .05 x 5

12

Nov. 30	Premium on Bonds payable	3,432.20	
	Bond Interest expense		3,432.20
	To amortize premium on		
	\$1,500,000 bonds over 118		
	months.		
	45,000 x 9		
	<u>118</u>		

Nov. 30	Bond Interest expense	135.14	
	Discount on Bonds payable		135.14
	To amortize discount on		
	1,500,000 bonds over		
	111 months. 7,500 x 2		
	<u>111</u>		

1959

Jan. 1	Premium on Bonds payable	381.35	
	Bond Interest expense		381.35
	To amortize 1 month's bond		
	premium		
	45,000 x 1 month		
	<u>118</u>		

Jan. 1	Bond Interest expense	67.57	
	Discount on Bonds		
	payable		67.57
	To amortize 1 month's bond		
	discount		
	7,500 x 1		
	<u>111</u>		

Jan. 1	Bonds Payable	1,500,000.00	
	Premium on Bonds payable ...	22,881.36	
	Loss on Redemption	7,118.64	
	Cash		1,530,000.00
	To record redemption of		
	1,500,000 bonds at 102.		

Jan. 1	Bonds payable	1,500,000.00	
	Loss on redemption	34,054.06	
	Discount on Bonds payable		4,054.06
	Cash		1,530,000.00

COST AND MANAGEMENT

To record redemption of
1,500,000 bonds at 102.

Carrying value of bonds redeemed.

Par value	\$1,500,000.00
Add: Unamortized premium	22,881.36
	<hr/>
60 x 45,000	1,522,881.36

118

Redemption price 102	1,530,000.00
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Loss on redemption	\$ 7,118.64
Par value	\$1,500,000.00
Less: Unamortized discount	4,054.06

60 x 7,500	<hr/> 1,495,945.94
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111

Redemption price	1,530,000.00
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Loss on redemption	<hr/> \$ 34,054.06
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COMMENT

Question 1

The average mark obtained for this question was 13 out of 20 marks. 17 of the students failed to answer the question.

The major difficulties encountered in the question arose in respect to the amortization of the discount and premium on the bonds issued and redeemed. The terminology used in answering the question was frequently misleading in that balance sheet terminology was required. A certain degree of leeway was provided in the marking provided the student had clearly indicated the assumption upon which his answer was submitted.

As this question required extensive calculation, numerous errors occurred in this area. The penalty imposed for this type of error was reasonable.

